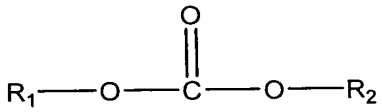
AMENDMENTS TO THE CLAIMS

Please cancel claims 1-20, and add new claims 21-44, as follows:

Claims 1-20 (Cancelled).

Claim 21 (New) A process for recycling expanded polystyrene comprising:

volume reduction of expanded polystyrene by dissolution in a solution comprising a dialkyl carbonate, or a blend of dialkyl carbonates, having the following general formula (I):



(I)

wherein R_1 and R_2 are the same or different and each independently represent a linear, a branched or a cyclic alkyl radical having from 1 to 12 carbon atoms, and the sum of the carbon atoms of R_1 and R_2 is from 2 to 15;

removal of an insoluble component, if present;

selective precipitation of polystyrene with a non-solvent, wherein the non-solvent is an alkylene carbonate, or a blend of non-solvents consisting of an alcohol and an alkylene carbonate;

separation of precipitated polystyrene; and

drying of precipitated polystyrene.

Claim 22 (New) The process according to claim 21, wherein R_1 and R_2 each independently represent a linear or a branched alkyl radical having from 1 to 8 carbon atoms, and the sum of the carbon atoms of R_1 and R_2 is from 5 to 10.

Claim 23 (New) The process according to claim 22, wherein the dialkyl carbonate, or blend thereof, is selected from dialkyl carbonates having a flash point higher than 55°C.

Claim 24 (New) The process according to claim 21, wherein the dialkyl carbonate, or blend thereof, is selected from dialkyl carbonates having a flash point higher than 55°C.

Claim 25 (New) The process according to claim 21, wherein the dialkyl carbonates are selected from the group consisting of di-n-butyl carbonate, di-iso-butyl carbonate and di-n-propyl carbonate.

Claim 26 (New) The process according to claim 21, wherein said dissolution is carried out under atmospheric pressure at a temperature of 20-70°C with optional stirring, and the concentration of expanded polystyrene in the solution is 5-50 wt. %.

Claim 27 (New) The process according to claim 21, wherein said dissolution is carried out under atmospheric pressure at room temperature with stirring, and the concentration of expanded polystyrene in the solution is 15-40 wt. %.

Claim 28 (New) The process according to claim 21, wherein the insoluble component is present and said removal thereof from the solution is carried out by decanting, filtration or centrifugation.

Claim 29 (New) The process according to claim 21, wherein said selective precipitation of polystyrene is carried out by feeding the solution to the non-solvent under stirring.

Claim 30 (New) The process according to claim 29, wherein said selective precipitation of polystyrene is carried out by feeding the solution into a bottom portion of a precipitation reactor below a stirring system.

Claim 31 (New) The process according to claim 29, wherein said selective precipitation of polystyrene is carried out by feeding the solution to the non-solvent at a flow rate of 30-1,500 g of solution per hour per liter of non-solvent.

Claim 32 (New) The process according to claim 29, wherein said selective precipitation of polystyrene is carried out by feeding the solution to the non-solvent at a flow rate of 50-800 g of solution per hour per liter of non-solvent.

Claim 33 (New) The process according to claim 21, wherein said selective precipitation of polystyrene is carried out at a temperature of 10-70°C.

Claim 34 (New) The process according to claim 21, wherein said selective precipitation of polystyrene is carried out at a temperature of 15-60°C.

Claim 35 (New) The process according to claim 21, wherein said selective precipitation of polystyrene is carried out with a weight ratio of the non-solvent to the dialkyl carbonate of 2-20:1.

Claim 36 (New) The process according to claim 21, wherein said selective precipitation of polystyrene is carried out with a weight ratio of the non-solvent to the dialkyl carbonate of 3-15:1.

Claim 37 (New) The process according to claim 21, wherein the non-solvent is an alkylene carbonate selected from the group consisting of propylene carbonate, ethylene carbonate and butylene carbonate.

Claim 38 (New) The process according to claim 21, wherein the non-solvent is a blend of non-solvents consisting of an alcohol and an alkylene carbonate, wherein the alcohol is one or more alcohols selected from the group consisting of n-butyl alcohol and iso-propyl alcohol, and the alkylene carbonate is one or more alkylene carbonates selected from the group consisting of propylene carbonate, ethylene carbonate and butylene carbonate.

Claim 39 (New) The process according to claim 21, wherein said separation of precipitated polystyrene is carried out by decanting, filtration or centrifugation, at a temperature of 10-70°C.

Claim 40 (New) The process according to claim 21, wherein said separation of precipitated polystyrene is carried out by decanting, filtration or centrifugation, at a temperature of 15-60°C.

Claim 41 (New) The process according to claim 21, wherein said process further comprises, after said separation and before said drying of precipitated polystyrene, washing of precipitated polystyrene at a temperature of 10-80°C with a method selected from the group consisting of:

pouring the non-solvent onto a filter comprising precipitated polystyrene;

suspending precipitated polystyrene in the non-solvent under stirring; and

continuous extraction of precipitated polystyrene with the non-solvent.

Claim 42 (New) The process according to claim 21, wherein said drying of precipitated polystyrene is carried out at a temperature of 50-180°C under a pressure of 1-760 mm Hg.

Claim 43 (New) The process according to claim 21, wherein said drying of precipitated polystyrene is carried out at a temperature of 80-150°C under a pressure of 10-500 mm Hg.

Claim 44 (New) The process according to claim 21, wherein said process further comprises, after said drying of precipitated polystyrene, extrusion of precipitated polystyrene.